DOCUMENT RESUME

ED 467 971 IR 021 491

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TITLE	Finnish Virtual (Online) Collaborative University--A Model for Australia?
PUB DATE	2001-12-00
NOTE	11p.; In: Meeting at the Crossroads. Proceedings of the Annual Conference of the Australasian Society for Computers in Learning in Tertiary Education (ASCILITE 2001) (18th, Melbourne, Australia, December 9-12, 2001); see IR 021 433.
PUB TYPE	Reports - Descriptive (141) -- Speeches/Meeting Papers (150)
EDRS PRICE	EDRS Price MF01 Plus Postage. PC Not Available from EDRS
DESCRIPTORS	Comparative Analysis; *Distance Education; Educational Planning; Educational Technology; Foreign Countries; Higher Education; *Institutional Cooperation; Models; *Online Courses; Program Development; Technology Uses in Education; *Virtual Universities; *Web Based Instruction
IDENTIFIERS	Australia; Finland

ABSTRACT

This paper contrasts two planned online university ventures, the Virtual University of Finland and the University of Australia Online. The meaning and operations of these institutions are considered with respect to the virtual teaching and research nexus, cost issues, and their capability to respond to quick changes in knowledge. The issue of organizational collaboration underlying these plans is explored in terms of negative and positive examples. Their virtual operations are discussed in terms of the fundamental educational interactions leading to observations to be considered in the development of new virtual and online education provisions. (Contains 23 references.) (MES)

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ED 467 971

FINNISH VIRTUAL (ONLINE) COLLABORATIVE UNIVERSITY – A MODEL FOR AUSTRALIA?

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Abstract

Virtual universities are springing up around the world. In this paper two planned online university ventures are contrasted, one from Finland and the other from Australia. The meaning and operations of these institutions are considered with respect to the virtual teaching and research nexus, cost issues and their capability to respond to quick changes in knowledge. The issue of organisational collaboration underlying these plans is explored in terms of negative and positive examples. Their virtual operations are discussed in terms of the fundamental educational interactions leading to observations to be considered in the development of new virtual and online education provisions.

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Keywords

virtual university, collaboration, online teaching, virtual research, interaction

Introduction

On the 18th of January 2001 one of the latest national virtual university ventures was announced. This virtual university is being set up in Finland, one of the most technologically advanced countries in the world, where the take-up rates for mobile phones and Internet connections are among the highest in the world. It is also a small country, with current population of only about 6 million. Six days later the Australian federal opposition leader, Kim Beazley, addressed the National Press Club in Canberra, announcing the establishment of the University of Australia Online (UAO) if the Australian Labor Party wins the next election (Beazley, 2001b). Thus on opposite sides of the globe modern initiatives to improve tertiary education expect to take advantage of the Internet. This paper seeks to consider the nature of these ventures, to see if there are parallels between them, and to assess the alternative approaches.

The model adopted for the Virtual University of Finland (Suomen Virtuaaliyliopisto, SVY) is a collaborative model. Instead of creating a new separate national institution, like the open universities of UK, Netherlands, etc., and the structure implicit in the ALP proposal for University of Australia Online (Beazley, 2001a), the SVY is building an online presence based on all the existing Finnish Universities. The existing universities will provide the academic structure, such as student enrolment, teaching and accreditation, through the SVY. The SVY (online) will provide the infrastructure for the educational online delivery and interaction as well as facilitating the inter-university subject and course delivery negotiations.

In a new collaborative virtual university venture at least three areas need to be considered in depth to ensure a reasonable chance of success. They are the concept and sense of a modern university, the organisational collaboration that underpins the activity of the entity, and the virtual nature of the operation. This paper will attempt to open up the discussion from these three perspectives.

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Meaning and Operation of a Modern University

Teaching and Research Nexus

In the national DETYA sponsored conference on "Online learning in a borderless market" earlier this year, the vice-chancellor of the Central Queensland University, Lauchlan Chipman, explored the notion of a university in the 21st Century (Chipman, 2001). He discussed how well various entities commonly identified as "universities" met the criteria used by the Australian Vice-Chancellors Committee (AVCC):

- the institution must have a legislative basis for its establishment, or alternatively, it must identify the formal basis on which the institution is given recognition by the government;
- the institution will have a stated and actual commitment to the advancement, dissemination and preservation of knowledge through teaching, scholarship and research;
- the institution's resources and infrastructure will be at a level sufficient to sustain a broad range of teaching, scholarship and research; and
- the institution and its staff will have an appropriate research record, together with research plans and capabilities.

He argued that many institutions commonly regarded as "universities" did not fully meet these criteria. Although chiefly arguing that the notion of a university is place and time sensitive, he also commented on the assumed necessary connection between teaching and research in a university, and criticised this assumption on a number of grounds. For example, he was concerned about the costs of maintaining this nexus in an online, i.e. virtual, university. In his view there may be a mismatch between the teaching, or award provision needs, and the research needs in a given community, i.e. just because more teaching is needed in a given discipline, that discipline need not be the highest research priority as well. Thus he indicated it might be quite feasible to provide online teaching functions, commonly recognised as typical of a university, without the associated research activity and costs in a virtual university.

In this respect the collaborative virtual/ online university model has much to commend itself. For example the SVY approach envisages the existing universities providing teaching functions via online technology. In this regard the university research component is not at the forefront of the initial development, and the SVY does not appear to be paying for the research component of the staff salaries, rather their home institutions will pay for and receive the benefit of the research activities of these staff, apart from the research benefits that get incorporated into their teaching.

The nature and cost of the research component in the University of Australia Online is not clearly defined in the available documents (Beazley, 2001a, 2001b). However, the proposal appears to downplay research activity, except in signalling a welcome establishment of an Institute of Online Teaching, with the dual roles of research and dissemination of information about effective online teaching, learning and course design (Beazley, 2001a). However, if either the SVY or the UAO were to ignore the virtual research dimension (recent personal communications indicate Finland will address it in the near future), they risk missing a unique opportunity for opening up new fields of research as well as creating new collaborative structures for research. For example, Birnbaum (2000) describes how psychology research can address and benefit from the Internet communications environment. Similar examples could be drawn from other fields, for example, the main impetus for developing the World Wide Web, HTML, and graphical interface browsers was to facilitate collaborative high energy physics research.

Cost Savings in Virtual University

One of the main drivers for moving into virtual or online university provision is to lower the cost of university education (Beazley, 2001b; Cunningham *et al*., 2000; Elkner, 2001). Let us examine how this relates to the planning of the SVY and UAO. The chair of the Finnish university rectors association, a key figure in promoting the idea of the SVY venture, Paavo Uronen, listed the benefits of an effective SVY as providing:

- freedom from place and time restrictions;

- flexible programs and better opportunity for individual elective subject study;
- international exchange of learning content;
- coordination and synergy in content creation;
- savings in space; and
- effective use of time (e.g. between semesters, etc.).

(translation by author, URL: http://www.virtuaaliyiopisto.fi/arkisto/puheuronen18012001.html)

In the case of the SVY only one of the envisaged benefits relates to savings. It is assumed there are savings of space, presumably space used by on-campus students for learning, recreation, sporting, cultural, etc., activities. What is significant in the SVY plan is that the savings are not expected to come from the creation of content, in fact Uronen mentions in the same inaugural speech that the experience of the best Finnish and overseas universities in online learning provision indicates significant resources are required to produce effective web-based learning materials. Chipman also argues that the experience of the (online) University of Phoenix indicates the cost of good quality online provision may even be higher than normal on-campus education (Chipman, 2001).

Thus, rather than naively assuming virtual or online universities will produce cost savings in all aspects of educational provision, the Finnish planners have identified some possible savings in the bricks and mortar area, but are also prepared to approach the cost of quality content development in more realistic terms than most virtual delivery enthusiasts, and realise that it may cost the same or even more than conventional course preparation. This is a refreshing approach to the costs of virtual universities, where rather than treating virtual, online or distance education provision as a money saver across the board, a more realistic approach to the learning provision is taken with an appropriate commitment to quality. The possible areas of money saving are more clearly identified, but the likely greater costs are also recognised and included in the basic planning process.

In the University of Australia Online context the cost savings are addressed realistically in terms of the start-up costs, both in terms of UAO itself and the needs of the universities providing course materials for the UAO, but without specific amounts being listed yet, and with the hope that economies of scale will help to reduce average costs per student. National aggregation of unviable small student groups via online course provision is also expected to enable less popular courses to survive (Beazley, 2001a). One of the key provisions of the UAO proposal is a reduced HECS fee rate, but with supplementation from the government to ensure the course providers are not disadvantaged. However, for this approach to be effective usually requires large student groups for the courses, e.g. in information technology and business, but it is precisely in these disciplines we can expect to meet considerable high quality, low cost online competition from international providers, such as India, and high visibility brand name, high cost competition from USA (Hilsberg, 2001). Thus, some of the UAO costing assumptions may not stand the test of implementation. Adopting the more realistic Finnish approach to costs, would reduce the likelihood of implementation disappointments at UAO.

Virtual University Response to Fast Knowledge Change

Many commentators argue that the nature of a modern university needs to be shaped by the fast changing knowledge (Elkner, 2001; Spender, 2001). It appears that conventional education provision is not able to provide the speed of response to learning and training needs of the modern society. Thus online or virtual learning providers have an opportunity to fill the yawning gaps with quickly developed or repurposed learning content (Elkner, 2001; Llwellyn, 2001). Virtual or online learning institutions are assumed to have the capacity to meet emerging needs faster than conventional universities. However, my experience of teaching in both on-campus and off-campus modes, utilising both conventional distance education materials and innovative communications technologies indicates that change and response to emerging needs may actually be slower.

It all depends on the process employed, rather than on whether we are talking about on-campus vs. off-campus modern communications technology-mediated educational contexts. If the process involves the development of new materials with good quality educational design, employing

appropriate online development, sufficient time needs to be taken to plan, design, develop, evaluate and revise learning materials that can be used by students who do not have as easy access to support by tutors or peers as on-campus students (Doube, Kennedy, & Tuovinen, 2001). The design and actual implementation of good independent learning educational design is not a trivial affair, nor is it achieved as quickly as handout development for on-campus classes with substantial local support in the form of lecturers and tutors (Rowntree, 1994). The development of materials for independent and remote learners is frequently much more time-consuming process than course materials preparation for conventional university education.

However, if the nature of the enterprise for producing new learning materials was streamlined, e.g. by deploying the development staff fully on development tasks during content development periods, rather than expecting them to be involved in other activities as well, such as on- or off-campus teaching or research, providing them with appropriate training in relevant techniques and systems, sufficient dedicated support by educational designers, media developers, etc. who are solely dedicated to specific projects rather than having to fit new developments into already crowded work schedules, modularising the content, and providing them with suitable tools and content repositories with appropriate metadata organising systems (Elkner, 2001; Llwellyn, 2001), one could hope to speed up the content creation and maintenance processes. Thus this is not only a question about the online/ virtual nature of delivery and interaction vs. on-campus provision, but as much a question of the organisational processes underlying the delivery.

It appears SVY is seeking to develop the processes for content creation that will allow it to rapidly meet the needs of the potential students. However, the size of the group envisaged to be involved in content creation appears to limit the speed of action. The SVY is intending to create virtual content along discipline lines. This means all the departments in a given discipline in the participating universities will work together to create the relevant content. For example, all Finnish university departments offering physics will decide how they develop and teach the SVY physics courses. This number of players in the development team may slow down the process, unless some efficient methods for decision making and development are adopted very early in the process.

The issue of mechanisms to ensure speedy addressing of emerging educational needs has not been discussed in the current University of Australia Online context. Presumably the independent nature, dedicated purpose and support from the integrated Institute of Online Teaching are expected to free the organisation from on-campus teaching and research distractions and allow it to work solely on the online teaching preparation and delivery. However, the nature of the course materials preparation, which is expected to involve the UAO itself, other universities as well as commercial partners, appears to be so complex that the coordination process may swallow up many of efficiencies gained from the independent nature of the structure. There does not seem to be the same degree of inter-organisational collaboration, and consensus input in materials development in the UAO as in the SVY plans. The benefit of this is that with less people to consult the process should work more quickly, but with reduced input the products may not incorporate as large a range of informed perspectives.

Organisational Collaboration

This brings us to the issue of organisational collaboration, which is a key issue in the Finnish Virtual University project, and in any collaborative project. We will discuss some examples of off-campus education that appear to be relevant to virtual university enterprises.

Let us begin with the case of the University of Mid-America. This was an attempt to create an open university in USA based on a traditional university base but utilising television and radio to provide much of the educational delivery. In the 1970s to early 1980s the president of the University of Nebraska and the general manager of the Nebraska educational television network gathered together a significant collection of institutions from that region to a consortium, whose activities were seeded by the US federal government, to develop a distance education university

using the latest educational technology (McNeil, 1993). The program developed excellent learning materials, and enrolled 20,000 students in the seven states represented by the member universities and another 20,000 outside their geographical area.

However, the consortium failed. When the federal seed money ran out, the consortium folded. McNeil (1993, p. 124-126, 129-130) cites the following reasons for the failure:

- inadequate funds for production and distribution;
- confusion about the mission of the consortium;
- funding of the consortium from the outside instead of by members;
- difficulty in accepting learning content produced outside own institutions, i.e. 'it wasn't made here' syndrome; and
- conservatism and resistance to change by the university community.

His conclusion is salutary:

> For a state, a university, or a school system to engage in a co-operative venture, each member must gain something from the exchange. And those 'somethings' have to be more than window-dressing. They must have substance. They must be worthwhile. Members in a consortium also must realize that participation is going to have a cost – either cash or staff support. Like other organizations, consortia do not operate for nothing. In addition, consortium members have to agree to give up some autonomy and responsibility in the designated activity area. No consortium is worth its salt if it deals only with problems that everyone agrees upon. Consensus is desirable but, in many cases, the consortium cannot afford consensus-only decisions.

He developed seven key questions for institutions intending to join in collaborative ventures:

1. What are the consortium's objectives?
2. Whom should the consortium serve?
3. What structure will be needed to manage the consortium?
4. What new policies will be needed to manage the consortium?
5. What involvement will faculty and students have in managing the consortium?
6. Who will set priorities for the consortium?
7. What will the consortium cost in hard cash, staff support and time?

These questions pinpoint the minimal success quantum. If satisfactory answers to these questions cannot be found in the consortium planning and practice, the collaborative activity is in grave danger. This is not to say that satisfactory answers will guarantee success, but unsatisfactory answers will almost certainly lead to failure.

The second example we could consider is Open Learning Australia. This brave new collaborative venture conceived in 1993 was intended to provide distance education to Australia at a lower cost than from the conventional sources. Economies of scale were expected to provide cheaper course provision. For example many institutions intended to provide partial courses via OLA to lead the students into their existing distance education courses. The expected economies of scale also were expected to arise from multipurposing existing distance education materials since they would not need substantial extra work to deliver via OLA (J. Beck, personal communication).

Broadcast television was seen as one of the main communications mechanisms of OLA. However, even though it has been a good advertising medium for Open Learning, including providing people a free taste of the courses, because of finance restrictions on making good quality educational television programs, it has not been used as the main channel.

Due to cost and other pressures on the initial consortium a new consortium with shared ownership by seven institutions was negotiated. This consortium has now developed a successful distance education provision model, including a suitable business model for its operation, and is providing more than 300 units of study leading to 51 courses from 27 universities or colleges.

As a third example I shall consider is the ANTA Toolboxes project (online). The Toolbox project arose out of the Australian TAFE community realising the individual members could not sustain the cost of high quality learning resource development. Acting independently to produce new high quality resources, with suitable learning strategies and support materials was not feasible. Instead they decided to redirect some of their funding from other projects to collaborative resource development (Oliver *et al.*, 2001). In doing this they have maintained control of the process by setting up a representative Project Steering Group within the context of the Australian Flexible Learning Framework established by the EdNA VET Advisory Group (EVAG). The Project Steering Group comprises senior flexible learning managers from several states and territories, and representatives from ANTA, DETYA, etc. Its six-weekly meetings determine policy issues relating to toolbox development, the selection of projects and the evaluation of project outcomes. This ensures the resources developed are of the highest possible quality, but made available at an affordable cost to the participants and the funds are spent on resource production directly benefiting members' teaching functions. For example the cost of producing a single "toolbox" might be in the $100,000s, but the resulting materials will then be available for only few hundred dollars (http://www.flexiblelearning.net.au/toolbox/series1/describe.html).

These last two examples indicate some key aspects of collaboration in the provision of online/ virtual education. Firstly, both of these consortia have clear benefits to gain from the activities. Secondly, they have both been willing to contribute sufficient resources to the activities to make them work in practice. The original funding for OLA units was so low that it discouraged some of the established distance education providers from developing suitable offerings. In particular, the funding was far too limited to allow the main television communications medium to be used effectively by all the participants (J. Beck, personal communication). In the negotiation of current consortium arrangement these issue were known and understood more clearly by the participants and more realistic unit development and delivery mechanisms and costings were used as the basis of the agreement.

These aspects of collaboration in the Virtual University of Finland project are currently under negotiation and so their model is not mature enough to provide guidance for the collaborative operational aspects of other equivalent programs. Secondly, even if an exemplary collaboration model was already in place in the SVY model, it has not been in practical operation for long enough for that model to be tested and produce results to indicate the value of their approach.

The nature of collaboration in the University of Australia Online model is represented schematically in Figure 1 provided in the ALP Policy Paper (Beazley, 2001a).

The collaboration between the UAO and the existing universities is not very clearly spelled out, except to indicate it will work with existing universities to commission content development in the universities, and to provide assistance to them in their online teaching development via the Institute of Online Teaching (Beazley, 2001a). The model of the Australian Cooperative Research Centres is invoked in the Policy Paper to indicate the approach to 'online education industry development program' to be adopted. Although citing a well-known collaborative research approach, it is still not clear how this would work out in the context of educational online content development, delivery and maintenance. All the collaboration difficulties spelled out earlier, especially by McNeil, are yet to be addressed, and as we saw in the case of the University of Mid-America, they may be fatal flaws, or perhaps they could be resolved in practice as OLA has done. What is missing here is the ground swell from the institutions themselves to develop and set up this mechanism for facilitating online education in Australia, as in the case of the ANTA Toolboxes program. The lack of this motivation and grass roots commitment is one of the biggest problems facing the UAO.

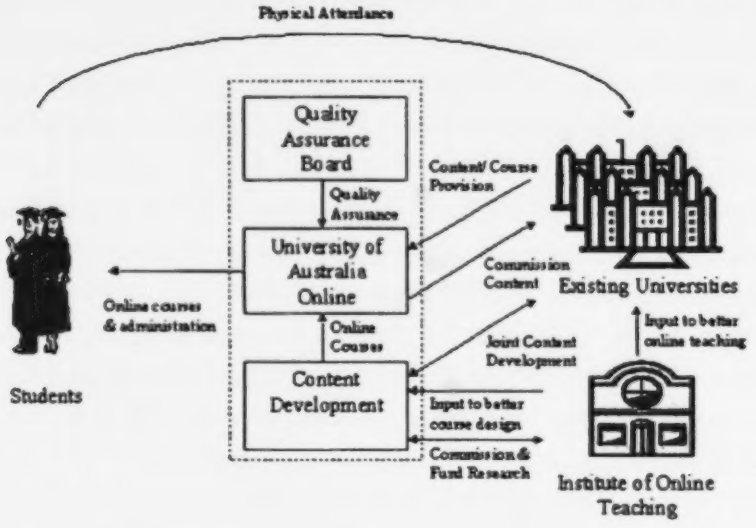

Figure 1: University of Australia Online (from ALP UAO Policy Paper)

Virtual Nature of Educational Operation

The virtual nature of the Virtual University of Finland and its implications for the UAO deserves some comment. It is the online or virtual provision of education that is intended to enable the SVY to meet its critical mission objectives outlined above by Rector Uronen. The SVY notion appears to imply an online delivery of the educational program to achieve the six aims listed by Uronen. However, we could equally argue that a well-organised collaborative conventional distance education program could also deliver the same outcomes. Why then does the distance provision in the SVY (and UAO) have to be largely online?

Let us use the four interactions model developed to link together the educational interaction involved in typical distance and online education programs to discuss these issues – see Figure 2 (Tuovinen, 2000).

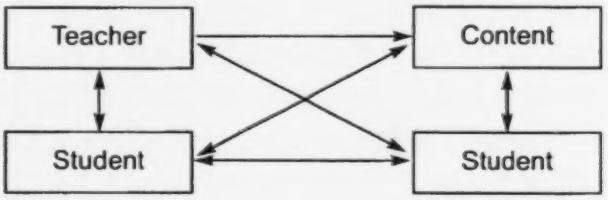

Figure 2: Four fundamental distance education interactions (Tuovinen, 2000)

Firstly, the organisational aspects of the materials development (*teacher – content* interaction in the above model) in SVY may not be any more virtual or online than, for example, at OLA. Both SVY and OLA are moving to create a metadata standards-based system for the development of learning objects. The key aspects in this process are the identification of the processes and standards involved in the creation, storage, and delivery of educational content. The hope of the virtual nature of this interaction is to enable the same material to be more easily shared between interested participants in the development process. Similarly the material is intended to provide reusable learning objects,

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so that the existing resources can be repurposed and reused. Both of these organisations will need to implement particular instances of metadata-based content creation systems, and until the particular systems have been developed it is not at all clear how well they would operate.

It would be expected that a similar approach would be followed by the UAO, to ensure that its operations employed the best international standards and practice. However, the existing proposals for UAO have not yet addressed this level of detail.

Secondly, virtuality in this situation can be taken to mean online interaction between the student and the content. It is not clear if the SVY or UAO are intending to enable all *content-student* interactions to be *only* in online mode, or *partly* in online mode. The expectation in the relevant literature seems to favour the use of multiple methods of interaction for content-student interaction, where online aspects are an important possible component to be used strategically by the educational designer, but where they must not constrain the selection from a wide ranging menu of communication choices (Keegan, 2000; Lockwood, 2001).

An interesting alternative in this regard is provided by the development of virtual campuses in some Australian universities. For example, Monash University initiated the Berwick campus in Victoria, as a virtual campus. The University installed large-scale interactive videoconferencing systems at a number of the existing campuses as well as at Berwick, to allow students to receive lectures from staff teaching at other campuses at Berwick as well (Jamieson, Miller, Sunderland, & Tennant, 1999).

The experiences of some of these teachers are described in a short account, entitled "Understanding teleteaching: the experience of four Monash teachers" (Jamieson, 2000). These accounts indicate that teaching in this mode is significantly different to normal classroom teaching. The teachers new to this environment need substantial preparation for the new mode, or else the whole process may be unsatisfactory.

Two Monash University staff not mentioned in this book taught Accounting using teleteaching to two groups at two campuses, Gippsland and Berwick. They interspersed teleteaching with conventional on-campus teaching over four years. Interestingly the students very much preferred on-campus teaching to teleteaching (Halabi, Tuovinen, & Maxfield, 2000), but their results from the teleteaching semesters (same content, same teachers, same amount of time, same assessment) were significantly better than from conventional on-campus classes. We have not yet finished analysing the reasons why this might be so. Thus we do not wish to make any grandiose claims for virtual campuses or video-mediate teaching, but given good quality teaching and content, teleteaching does not in itself reduce learning, and may even enhance it!

In fact, a comparative study by Katz indicates video-mediated distance teaching is superior to both Internet-based offerings and audiographic teaching approach, where the students and teacher are not able to see each other even thought they are in real-time group study sessions (1999). He found that students learnt the most from video-mediated teaching and it was their preferred mode of study out of these three options. Thus in the rush to virtual teaching, it is well worth considering video-mediated real-time interactive teaching as a major component of the delivery, instead of by-passing it for the Internet or even audio-conferencing supported by live interaction via networked computer conferencing.

On the other hand, it is clear that asynchronous online interaction can provide a very useful dimension to extending the students' interactions with their tutors and with their peers. For example, Keegan notes that in 1999 at the Open University of UK 70,000,000 emails were sent per year and 700,000,000 emails were read by students (2000, p. 15). However, this is still not an argument to suggest that *all* the *student-student* or *student-tutor* interactions should be conducted online at SVY, UAO or any other online university for optimal effect.

However, to overcome isolation, family and finance commitments (Beazley, 2001b) the *possibility* must exist for all the four interactions to be carried out completely online. Thus it should be possible for collaborative teams to produce SVY or UAO material using a common online metadata

standards-based system, where the existing relevant material is available for reuse, irrespective of whether the participants are working in the same office or on the opposite sides of the globe. Similarly, the student should be able to interact with the content purely online, without using any other means or materials. Thirdly, it should be possible for the tutors and students to discuss issues and work in dynamic shared workspaces, either in real time or asynchronously, without being physically in the same place. Finally, it should also be possible for the students to work on collaborative learning projects online, without having to attend the same work space, as in the advanced design distributed workspace, 'The Studio', developed between the University of Lulea, Sweden and Stanford University, USA, which utilises shared virtual reality spaces for developing design prototypes by group members located in different places, even in different countries (online).

Conclusion

This brief comparative discussion of the Finnish plans for a collaborative virtual university and the Australian Open University proposal has sought to examine the nature of such an enterprise by considering the nature of a modern university, the underlying collaborative structure and some aspects of virtual/ online operations. Both proposed institutions will need to wrestle with the teaching/ research roles in an online environment. The assumed cost benefits in the UAO model may be harder to realise than the more realistic SVY plans. It appears the Finnish and the UAO enterprises may meet similar challenges to OLA in its early days, especially in terms of contributions to the shared enterprise by fiercely independent universities, who find it difficult to agree on credit transfer, let alone funding operations they do not fully control. However, such an enterprise can take advantage of the metadata-based online systems developed for content tagging, storage and reuse for more efficient content development.

The assumptions about online/ virtual universities using only Internet for educational interactions in their programs needs to be reconsidered in light of recent findings about the value of video conference-mediated education. Similarly developments in mediating virtual reality learning environments online form a very promising opportunity for student-content, teacher-student and student-student interactions for virtual universities beyond the capabilities inherent in the SVY and UOA plans.

The structures expected to provide the speedy curriculum development, the timely responses to students and community educational needs still need substantial work. However, the Finns are fortunate in having very experienced operators on their implementation committee, and also are able to draw on the resources of the national supercomputing centre (CRC), e.g. in the development of the unified portal to the SVY. The telecommunications infrastructure based on the FUNET network is excellent, and the technical capacity of the Finnish companies to support the enterprise is second to none.

Similarly the UAO implementation can also draw on many local resources. Australia has a long history in distance education, with extensive experience in collaborative off-campus education provision via the OLA, collaborative resource development in the ANTA Toolboxes and collaborative research between multiple universities and industry groups in the CRC program.

Thus it will be interesting to see if the collaborative organisational hurdles and other challenges can be overcome to make SVY the Nokia of the virtual university world and UOA another BHP success story.

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